

REMARKS

Claims 1-7 and 9 are presented for further examination. Claim 8 has been canceled. Claims 1-6 have been amended, and claim 9 is new.

In the Office Action mailed July 31, 2003, the Examiner rejected claims 1-8 under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,246,673 ("Tiedemann, Jr. et al.").

Applicants respectfully disagree with the basis for the rejection and request reconsideration and further examination of the claims.

Applicants have amended the specification to include reference numbers now found in new Figure 3. No new matter has been added. Applicants respectfully request approval and entry of Replacement Figure 3 in the application.

The present invention is directed to a hard handoff method for an asynchronous CDMA base station to a synchronous CDMA base station. The CDMA base station transmits dummy asynchronous CDMA channels to a mobile terminal that is in communication with the asynchronous CDMA base station for the purpose of synchronizing a handoff time at the synchronous CDMA base station (a first step). The asynchronous CDMA channels include an asynchronous CDMA synchronization channel and an asynchronous CDMA common pilot channel. The intensity of the asynchronous CDMA channels is measured by the mobile terminal, which in turn reports the measured result to the asynchronous CDMA base station when the measured intensity is larger than an intensity of signals received from the asynchronous CDMA base station by a predetermined value (a second step).

The asynchronous CDMA base station then transmits a handoff request message to the synchronous CDMA base station on the basis of the measured result reported to the asynchronous CDMA base station (a third step).

The synchronous CDMA base station that receives the handoff request message then transmits information to the asynchronous CDMA base station (a fourth step). This information is necessary to performing the hard handoff and includes a starting point of the hard handoff, a long code state at the starting point of the hard handoff, an offset index at a pilot PN sequence, etc. The mobile terminal receives the information through a traffic channel from the

asynchronous base station and performs the hard handoff to the synchronous CDMA base station by using the information (a fifth step).

Tiedemann, Jr. et al., U.S. Patent No. 6,216,004, is directed to cellular communication systems with common channel soft handoff and associated methods. More particularly, Tiedemann, Jr. et al. teaches performance of handoff synchronization between synchronous and asynchronous base stations in a CDMA wireless communication system.

In remarks accompanying the rejection, the Examiner states that the present invention is disclosed at column 9, lines 22-55; column 10, lines 9-39; and column 10, line 56 through column 11, line 29. However, the teachings referenced by the Examiner are associated with performing handoff of a mobile station (MS) only from a synchronous serving base station (BTS1) to a synchronous target base station (BTS2).

Tiedemann, Jr. et al. teaches how to determine the propagation delay T1 from the MS to BTS1 at column 9, lines 22-55. However, Tiedemann, Jr. et al. does not disclose that the synchronous CDMA base station transmits dummy asynchronous CDMA channels, including an asynchronous CDMA synchronization channel and an asynchronous CDMA common pilot channel to a mobile terminal.

Moreover, Tiedemann, Jr. et al. teaches a method for determining one-way propagation delay T2 from MS to BTS2 at column 10, lines 9-39, but does not disclose that the mobile terminal measures an intensity of the asynchronous CDMA channels and reports the measured result to the asynchronous CDMA base station on the basis of the measured result. Rather, Tiedemann, Jr. et al. describes at Figure 3 the steps of establishing handoff of a mobile station from BTS2 to BTS1 (see column 10, line 56 through column 11, line 29), but Tiedemann, Jr. et al. does not disclose the technical idea of the third, fourth, and fifth steps of the disclosed and claimed invention.

Claim 1 is directed to a hard handoff method from an asynchronous CDMA base station to a synchronous CDMA base station that comprises a first step for the synchronous CDMA base station transmitting asynchronous CDMA channels, including an asynchronous CDMA synchronization channel and an asynchronous CDMA common pilot channel, to a mobile terminal being in communication with the asynchronous CDMA base station with a

purpose of synchronizing a handoff time at the synchronous CDMA base station; a second step for, on the basis of a result of measuring an intensity of the asynchronous CDMA channels, the mobile terminal reporting the measured result to the asynchronous CDMA base station; a third step for the asynchronous CDMA base station transmitting a handoff request message to the synchronous CDMA base station on the basis of the measured result reported to the asynchronous CDMA base station; a fourth step of the synchronous CDMA base station that receives the handoff request message transmitting an information to the asynchronous CDMA base station, wherein the information is necessary to perform the hard handoff; and a fifth step for the mobile terminal performing the hard handoff to the synchronous CDMA base station by using the information that is received through a traffic channel from the asynchronous CDMA base station.

As discussed above, Tiedemann, Jr. et al. describes a method of establishing handoff of a mobile station from an asynchronous serving base station to a synchronous target base station at column 14, line 43 through column 17, line 53, but Tiedemann, Jr. et al. does not teach or suggest transmitting the dummy asynchronous CDMA channels from a synchronous CDMA base station that are used in the hard handoff. Tiedemann, Jr. et al. teaches only using the synchronous CDMA channels, such as a sink channel and a pilot channel of the synchronous base station (see column 17, lines 8-27). In view of the foregoing, applicants respectfully submit that claim 1, as well as dependent claims 2-7, are clearly allowable over Tiedemann, Jr. et al.

New claim 9 is directed to a mobile terminal capable of performing a hard handoff from an asynchronous CDMA base station to a synchronous CDMA base station wherein the terminal performs the steps of receiving asynchronous CDMA channels including an asynchronous CDMA synchronization channel and an asynchronous CDMA common pilot channel from the synchronous CDMA base station while being in communication with the asynchronous CDMA base station; reporting a measured result to the asynchronous CDMA base station on the basis of an intensity of the asynchronous CDMA channels received from the synchronous CDMA base station, wherein the measured result is used in order for the asynchronous CDMA base station to transmit a handoff request message to the synchronous CDMA base station, which subsequently transmits a handoff information to the asynchronous

CDMA base station; and performing the hard handoff to the synchronous CDMA base station by using the handoff information that is received through a traffic channel from the asynchronous CDMA base station. Applicants respectfully submit that claim 9 is allowable for the reasons why claims 1-7 are allowable, *i.e.*, Tiedemann, Jr. et al. does not teach or suggest the combination of steps recited therein.

In view of foregoing, applicants respectfully submit that all of the claims in this application are clearly in condition for allowance. In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicants' undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application. Consequently, early and favorable action allowing these claims and passing this case to issuance is respectfully solicited.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,  
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ERT:jl

Enclosure:

Postcard  
1 Sheet of Replacement Drawings (Figure 3)

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